

PATENT COOPERATION TREATY

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NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 05 October 1998 (05.10.98)	
International application No. PCT/EP98/01287	Applicant's or agent's file reference AEM 2572 WO
International filing date (day/month/year) 28 February 1998 (28.02.98)	Priority date (day/month/year) 03 March 1997 (03.03.97)
Applicant HOFSTRAAT, Johannes, Willem	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

15 September 1998 (15.09.98)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer N. Fischer Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

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REC'D 18 MAR 1999

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference AEM 2572 WO	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) FOR FURTHER ACTION	
International application No. PCT/EP98/01287	International filing date (day/month/year) 28/02/1998	Priority date (day/month/year) 03/03/1997
International Patent Classification (IPC) or national classification and IPC G01N33/533		
Applicant AKZO NOBEL N.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 15/09/1998	Date of completion of this report 15.03.99
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0 Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Wieser, M Telephone No. (+49-89) 2399 8434 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP98/01287

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-23 as originally filed

Claims, No.:

1-6 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims
	No:	Claims 1-6
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-6
Industrial applicability (IA)	Yes:	Claims 1-6
	No:	Claims

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP98/01287

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP98/01287

Point V:

The following document mentioned in the International Search Report is considered as being the most relevant prior art:

(A) WPI/DERWENT; AN 92-110885; & JP-A-04 054 055

The subject-matter of claims 1-6 is anticipated by the disclosure in document A (see abstract). The claims do not meet the requirements of Article 33(2) PCT.

Even if novel subject-matter could be established by restricting the scope of the claims to rare earth metal ions which are not explicitly mentioned in document A, the subject-matter of claims 1-6 would not meet the requirements of Article 33(3) PCT, because it is not based on an inventive step. The use of complexes containing different rare earth metal ions and a sensitizing moiety for all kinds of fluorometric assays is well known in the art as can be seen from the documents cited in the International Search Report. It is obvious for a skilled person that the subject-matter of document A is not restricted to the rare earth metal ions explicitly mentioned in this document.

Point VII:

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in document A is not mentioned in the description, nor is this document identified therein.

Point VIII:

Claim 6 does not meet the requirements of Article 6 PCT. It is not clear how a kit can be a technically characterizing feature of an apparatus.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference AEM 2572 WO	FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. PCT/EP 98/ 01287	International filing date <i>(day/month/year)</i> 28/02/1998	(Earliest) Priority Date <i>(day/month/year)</i> 03/03/1997
Applicant AKZO NOBEL N.V. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (see Box I).

2. ☐ Unity of invention is lacking (see Box II).

3. ☐ The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing

☐ filed with the international application.

☐ furnished by the applicant separately from the international application,

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ Transcribed by this Authority

4. With regard to the **title**, ☒ the text is approved as submitted by the applicant

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is:

Figure No. --- ☐ as suggested by the applicant.

☐ None of the figures.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 98/01287

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G01N33/58 G01N33/533 C07D311/82

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G01N C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE WPI Section Ch, Week 9214 Derwent Publications Ltd., London, GB; Class B04, AN 92-110885 XP002036706 & JP 04 054 455 A (MOCHIDA PHARM CO LTD) , 21 February 1992 see abstract ---	1-6
X	DATABASE WPI Section Ch, Week 9609 Derwent Publications Ltd., London, GB; Class B02, AN 96-085967 XP002036707 & SU 1 340 087 A (MOSC FINE CHEM TECHN INST) , 27 June 1995 see abstract --- -/--	1-6



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

27 July 1998

Date of mailing of the international search report

06/08/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
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Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Moreno, C

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 98/01287

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE WPI Section Ch, Week 9609 Derwent Publications Ltd., London, GB; Class B02, AN 96-086153 XP002036708 & SU 1 621 720 A (MOSC ONCOLOGICAL RES INST), 9 July 1995 see abstract	1-6
A	--- CHEMICAL ABSTRACTS, vol. 105, no. 18, 3 November 1986 Columbus, Ohio, US; abstract no. 164071, S. SUSHENG & W. DONGMEI: "Color reaction of ternary complexes of rare earths with salicylfluorone and cetyltrimethylammonium bromide" XP002036704 see abstract & ZHONGGUO XITU XUEBAO, vol. 4, no. 1, 1986, pages 67-70,	1
A	--- CHEMICAL ABSTRACTS, vol. 110, no. 22, 29 May 1989 Columbus, Ohio, US; abstract no. 204714, S. SUSHENG & L. TANGGING: "Color reactions of rare earths with p-aminophenylfluorone and cetyltrimethylammonium bromide system." XP002036705 see abstract & BEIJING DAXUE XUEBAO, ZIRAN KEXUEBAN, vol. 24, no. 4, 1988, pages 441-446,	1
A	--- WO 96 00901 A (UNIV CALIFORNIA) 11 January 1996 cited in the application see the whole document	1,5
A	--- US 5 312 922 A (DIAMANDIS ELEFThERIOS P) 17 May 1994 see the whole document	1,5
A	--- US 4 352 751 A (WIEDER IRWIN ET AL) 5 October 1982 see the whole document	1,5
A	--- US 5 587 394 A (MORGAN ALAN R ET AL) 24 December 1996 see the whole document -----	1,5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 98/01287

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9600901 A	11-01-1996	US 5622821 A AU 688928 B AU 2956795 A CA 2193501 A EP 0767912 A JP 10505820 T US 5656433 A US 5639615 A	22-04-1997 19-03-1998 25-01-1996 11-01-1996 16-04-1997 09-06-1998 12-08-1997 17-06-1997
US 5312922 A	17-05-1994	AU 3885393 A WO 9320054 A EP 0635006 A	08-11-1993 14-10-1993 25-01-1995
US 4352751 A	05-10-1982	DE 3033691 A FR 2469416 A GB 2060623 A, B JP 60243052 A JP 60252684 A JP 56059741 A US 4432907 A US 4965211 A	19-03-1981 22-05-1981 07-05-1981 03-12-1985 13-12-1985 23-05-1981 21-02-1984 23-10-1990
US 5587394 A	24-12-1996	US 5563262 A US 5354858 A US 5693632 A	08-10-1996 11-10-1994 02-12-1997



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: G01N 33/533	A1	(11) International Publication Number: WO 98/39654 (43) International Publication Date: 11 September 1998 (11.09.98)
(21) International Application Number: PCT/EP98/01287 (22) International Filing Date: 28 February 1998 (28.02.98) (30) Priority Data: 97200615.9 3 March 1997 (03.03.97) EP (34) <i>Countries for which the regional or international application was filed:</i> NL et al. 60/042,354 24 March 1997 (24.03.97) US (71) Applicant (for all designated States except US): AKZO NOBEL N.V. [NL/NL]; Velperweg 76, NL-6824 BM Arnhem (NL). (72) Inventor; and (75) Inventor/Applicant (for US only): HOFSTRAAT, Johannes, Willem [NL/NL]; Marjoleinveld 4, NL-7006 VG Doetinchem (NL). (74) Agent: SCHALKWIJK, Pieter, Cornelis; Akzo Nobel N.V., Patent Dept. (Dept. APTA), P.O. Box 9300, NL-6800 SB Arnhem (NL).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: DIAGNOSTIC NEODYMIUM(III), YTTERBIUM(III), OR ERBIUM(III) ION-LIGAND COMPLEXES (57) Abstract <p>The invention relates to a method for detection of an analyte in a test sample by a specific binding reaction among the analyte, a specific binding partner for the analyte, and an (immuno)reactant provided with a label, characterized in that the label is a lanthanide ion-ligand complex wherein the lanthanide ion is neodymium(III) ion (Nd³⁺), ytterbium(III) ion (Yb³⁺), or erbium(III) ion (Er³⁺) and the ligand comprises or is in contact with a sensitizing moiety which absorbs in the 400-1000 nm region, and preferably in the 400-800 nm region. Further, a diagnostic kit is disclosed as well as a method of detecting an analyte in a matrix of biomedical interest through an oligonucleotide, an antigen, or an antibody attached to a material, preferably core-shell latex or with specific binding sites wherein the antigen or antibody is labeled with the lanthanide ion-ligand complex and brought into contact with the analyte, after which the analyte with the lanthanide-ion complex is immobilized on the material, and, optionally, residual lanthanide-ion complex is removed, after which the sample obtained is irradiated with light in the 400-1000 nm region, and the emitted light from said sample is detected if said analyte is present in the matrix of biomedical interest.</p>		

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G01N 33/58, 33/533, C07D 311/82		A3	(11) International Publication Number: WO 98/39654 (43) International Publication Date: 11 September 1998 (11.09.98)
(21) International Application Number: PCT/EP98/01287 (22) International Filing Date: 28 February 1998 (28.02.98) (30) Priority Data: 97200615.9 3 March 1997 (03.03.97) EP (34) Countries for which the regional or international application was filed: NL et al. 60/042,354 24 March 1997 (24.03.97) US (71) Applicant (for all designated States except US): AKZO NOBEL N.V. [NL/NL]; Velperweg 76, NL-6824 BM Arnhem (NL). (72) Inventor; and (75) Inventor/Applicant (for US only): HOFSTRAAT, Johannes, Willem [NL/NL]; Marjoleinveld 4, NL-7006 VG Doetinchem (NL). (74) Agent: SCHALKWIJK, Pieter, Cornelis; Akzo Nobel N.V., Patent Dept. (Dept. APTA), P.O. Box 9300, NL-6800 SB Arnhem (NL).			(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> (88) Date of publication of the international search report: 6 January 2000 (06.01.00) RECEIVED JUL 28 2000 INTELLIGENCE CENTER 1600/23000
(54) Title: DIAGNOSTIC NEODYMIUM(III), YTTERBIUM(III), OR ERBIUM(III) ION-LIGAND COMPLEXES			
(57) Abstract <p>The invention relates to a method for detection of an analyte in a test sample by a specific binding reaction among the analyte, a specific binding partner for the analyte, and an (immuno)reactant provided with a label, characterized in that the label is a lanthanide ion-ligand complex wherein the lanthanide ion is neodymium(III) ion (Nd³⁺), ytterbium(III) ion (Yb³⁺), or erbium(III) ion (Er³⁺) and the ligand comprises or is in contact with a sensitizing moiety which absorbs in the 400-1000 nm region, and preferably in the 400-800 nm region. Further, a diagnostic kit is disclosed as well as a method of detecting an analyte in a matrix of biomedical interest through an oligonucleotide, an antigen, or an antibody attached to a material, preferably core-shell latex or with specific binding sites wherein the antigen or antibody is labeled with the lanthanide ion-ligand complex and brought into contact with the analyte, after which the analyte with the lanthanide-ion complex is immobilized on the material, and, optionally, residual lanthanide-ion complex is removed, after which the sample obtained is irradiated with light in the 400-1000 nm region, and the emitted light from said sample is detected if said analyte is present in the matrix of biomedical interest.</p>			

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EE	Estonia						

INTERNATIONAL SEARCH REPORT

national Application No

PCT/EP 98/01287

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G01N33/58 G01N33/533 C07D311/82

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G01N C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI Section Ch, Week 9214 Derwent Publications Ltd., London, GB; Class B04, AN 92-110885 XP002036706 & JP 04 054 455 A (MOCHIDA PHARM CO LTD) , 21 February 1992 see abstract</p> <p style="text-align: center;">---</p>	1-6
X	<p>DATABASE WPI Section Ch, Week 9609 Derwent Publications Ltd., London, GB; Class B02, AN 96-085967 XP002036707 & SU 1 340 087 A (MOSC FINE CHEM TECHN INST) , 27 June 1995 see abstract</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	1-6

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

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"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

27 July 1998

Date of mailing of the international search report

06/08/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Moreno, C

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 98/01287

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI Section Ch, Week 9609 Derwent Publications Ltd., London, GB; Class B02, AN 96-086153 XP002036708 & SU 1 621 720 A (MOSC ONCOLOGICAL RES INST), 9 July 1995 see abstract</p>	1-6
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